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Gift (1-15-87)

National Cancer Institute (U.S.)
Annual report.

Division of

RESOURCES, CENTERS & COMMUNITY ACTIVITIES

1983 Annual Report
October 1, 1982-September 30, 1983

U.S. DEPARTMENT
OF HEALTH
AND HUMAN SERVICES

National
Institutes of
Health

National
Cancer
Institute

National Cancer Institute

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LISTING OF 6040 FORMS
INTRAMURAL RESEARCH PROJECTS

Z01 CN 00100 CPSB - U.S.-Finland Epidemiologic Studies of Nutrition and Cancer

Z01 CN 00101 CPSB - Human Studies of Diet and Nutrition

Z01 CN 00102 CPSB - Phase I Studies of Synthetic Retinoids

Z01 CN 00103 CPSB - Use of Isotretinoin in Prevention of Basal Cell Carcinoma

Z01 CN 00104 CPSB - NHANES I Epidemiologic Follow-up Survey:
Chemoprevention/Nutrition Aspects

Z01 CN 00105 BORB - Research in Cancer Screening Methodology and Modeling

Z01 CN 00106 BORB - Students Cancer Screening

Z01 CN 00107 BORB - Incidence of Basal Cell Skin Carcinoma in a
High Risk Population

Z01 CN 00108 BORB - Design of Pharmacokinetic Studies of Selenium

Z01 CN 00109 BORB - Development of Cancer Control Epidemiology and Tracking

Z01 CN 00110 BORB - Data Management and Design in Clinical Trials for
Cancer Prevention and Control

Z01 CN 00111 BORB - Core Data and Dietary Methodology

Z01 CN 00112 BORB - Retrospective Dietary Assessment

Appendix B

INTRAMURAL PROJECT SUMMARIES (Forms PHS 6040)

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00100 CPSB

PERIOD COVERED
October 1, 1982 - September 30, 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*
U.S.-Finland Epidemiologic Studies of Nutrition and Cancer

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, title, laboratory, and institute affiliation)
Demetrius Albanes, M.D., Medical Officer

COOPERATING UNITS *(If any)*

LAB/BRANCH
Cancer Prevention Studies Branch, DRCCA

SECTION

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.4	1.20	0.20

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The important relationship of diet and nutrition in the development of cancer has become well known through various research efforts. Laboratory studies have shown cancer inhibitory functions for various natural and synthetic nutrients in various models, which have been corroborated by human epidemiologic studies of of nutrient intake, tissue levels and cancer incidence. Vitamin A, beta-carotene and selenium have been strongly implicated for their cancer preventive potential, with evidence for the former two substances warranting clincical trials of their efficacy. In addition, the roles of other nutrients in cancer cause and prevention (e.g., dietary fats and fiber) require further investigation.

The objectives of the project are: 1) to determine if beta-carotene supplementation is effective in preventing lung cancer in smokers; 2) to better assess the role of selenium, vitamins A, E, and C, and fats in breast cancer development; 3) to investigate the role of various nutrients (in prenatal maternal blood) for the development of cancer in children, and 4) to evaluate the roles of various levels of nutrient intake to subsequent cancer.

The project includes four studies all of which take place in Finland. The first, a beta-carotene, lung cancer intervention trial, is a five-year, double-blind, placebo-controlled, randomized trial of daily beta-carotene supplementation (15 mg. orally) among cigarette smokers. Any reduction of lung cancer incidence in the beta-carotene group will be measured. The second is a breast cancer case-control study of selenium, vitamins A, E, C, fats and other nutrients (both serum levels and dietary history), using both benign breast disease and neighborhood controls. The importance of these nutrients in breast cancer development will be assessed. The dietary survey study will use previously collected dietary history information for a subgroup having developed cancer out of our original population cohort. Associations between various dietary components and different cancers will be assessed. The fourth study is a case-control investigation of prenatal maternal nutritional status (i.e., nutrient blood levels) and subsequent early childhood cancer incidence in those offspring.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00101 CPSB

PERIOD COVERED: October 1, 1982 - September 30, 1983

TITLE OF PROJECT (80 characters or less. Title must fit on one line between the borders.)
Human Studies of Diet and Nutrition

PRINCIPAL INVESTIGATOR (List other professional personnel on subsequent pages.)
(Name, title, laboratory, and institute affiliation)
Kathy J. Helzlsouer, M.D., Medical Officer

COOPERATING UNITS (If any)

LAB/BRANCH: Cancer Prevention Studies Branch, DRCCA

SECTION:

INSTITUTE AND LOCATION: National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.25	1	.25

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☐ (a2) Interviews

SUMMARY OF WORK (Use standard unreduced type. Do not exceed the space provided.)

The role of specific dietary factors in cancer prevention has been assessed through epidemiologic studies and animal experiments. For many of these agents, information is incomplete concerning their quality and form in the food supply, bioavailability, biochemical effects and the interaction with other nutrients. To further define these parameters in the human population, a cooperative research effort between the Beltsville Human Nutrition Research Center (BHNRC) and the Cancer Prevention Studies Branch, DRCCA, will be conducted. The three-year inter-agency agreement will encompass the development of analytical methods for routine analysis of nutrients as well as further investigation of the pharmacodynamics and interactions of those dietary factors identified as possible cancer preventive agents.

The overall goal is to obtain further information on those factors identified as potential cancer preventive agents with respect to their quantity and bioavailability in the food supply, health effects of supplementation and their pharmacokinetics in a healthy population, as well as improving methods for analysis of these nutrients. Investigations of the trace element selenium (Se) will be done during the first year. To date, few supplemental studies have been done and many questions concerning the pharmacokinetics and bioavailability of Se in its organic and inorganic forms remain unanswered. In addition, most of these studies have been done in populations with low Se status and, therefore, results cannot be extrapolated to the U.S. population which appears to have adequate Se status. The initial phase of the Se studies will examine the pharmacokenetics of a single oral dose of selenite and selenomethionine in a healthy population who have adequate Se intake at baseline. The second phase will examine the bioavailability and health effects of multiple doses of inorganic and organic selenium. Following these, a study will be done correlating dietary intake of B-carotene with B-carotene levels, retinol and retinol-binding protein levels in the blood. Further studies will examine interactions of dietary fat and fiber intake on vitamin and mineral balance.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00102 CPSB

PERIOD COVERED
October 1, 1982 - September 30, 1983

TITLE OF PROJECT (80 characters or less. Title must fit on one line between the borders.)
Phase I Studies of Synthetic Retinoids

PRINCIPAL INVESTIGATOR (List other professional personnel on subsequent pages.)
(Name, title, laboratory, and institute affiliation)
Earl C. Gross, M.D., and Joseph A. Tangrea, M.P.H., Senior Investigators

COOPERATING UNITS (If any)

Dermatology Branch

LAB/BRANCH
Cancer Prevention Studies Branch, DRCCA

SECTION

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.4	1.2	0.2

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK (Use standard unreduced type. Do not exceed the space provided.)

The objective of the Phase I studies is to provide the parameters and characteristics of drug toxicity, the maximally tolerated dose, the recommended dose and the basic pharmacokinetics of these agents. Drugs tested will be limited to oral synthetic retinoids.

Vitamin A and its synthetic analogs, collectively known as retinoids, have been actively studied in relation to their requirements in normal physiology and health as well as for their potential in prevention of human disease, notably cancer. In this regard, it has been established that: 1) Supplementation with retinoids can reverse tissue metaplasia and neoplasia in various laboratory models, restoring normal cell differentiation; and 2) Retinoids administered to animals can prevent chemical and viral induced carcinogenesis. They have been repeatedly shown to delay the appearance, retard the growth, cause the regression and prevent metastases of selected tumors. In addition, several epidemiological studies have shown an association of low levels of vitamin A with increased risk of cancer.

Based on this evidence and case reports demonstrating the successful chemoprevention of basal cell carcinoma with large doses of the retinoid isotretinoin, Phase I clinical trials using other new oral synthetic retinoids are proposed. Three new oral synthetic retinoids will be evaluated over the next one-year period with therapeutic intent for the dermatologic conditions of acne, psoriasis, disorders of keratinization (ichthyoses and Darier's Disease), basal cell carcinoma and other related dermatologic disorders. The studies will be designed to allow dosage escalation from a presumed non-toxic dose to a dose showing either substantive efficacy or toxicity. When moderate toxicity is reached, modification to lower doses will be made and patients examined monthly for chronic toxicity. Maximum duration of continuous treatment will be six months.

The specific objective is to establish safe and tolerated doses for conducting Phase II-III chemoprevention trials.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00103 CPSB

PERIOD COVERED

October 1, 1982 - September 30, 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Use of Isotretinoin in Prevention of Basal Cell Carcinoma

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*

(Name, title, laboratory, and institute affiliation)

Joseph A. Tangrea, M.P.H., Pharmaceutical Research Coordinator

COOPERATING UNITS *(if any)*

Biometrics and Operations Research Branch, DRCCA

LAB/BRANCH

Cancer Prevention Studies Branch, DRCCA

SECTION

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
2.5	2.0	0.5

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The study is a five-year randomized double-blind clinical trial designed to evaluate the effectiveness of low-dosage levels of isotretinoin in reducing the incidence of basal cell carcinomas in a high-risk population, and to examine possible side effects associated with long-term administration of low doses of isotretinoin. Approximately 1,800 evaluable subjects will be entered into the study within 12-18 months at ten participating clinical centers located around the country (military and Veterans Administration hospitals). At each center, subjects will be stratified and randomly allocated to intervention (10 mg/day) or control (placebo) groups.

Vitamin A and its analogs, collectively known as retinoids, have been actively studied for several years in relation to their requirements in normal physiology and health, as well as for their potential in prevention of human disease. This vitamin is necessary for the differentiation of epithelial cells and is essential for the development and function of growth, reproduction, and vision. Deprivation or deficiency of vitamin A promotes tissue metaplasia and neoplasia in various animal and organ culture models. Supplementation with retinoids can reverse these changes and restore functions of cell growth and differentiation in various cell lines.

Laboratory experiments have shown that retinoids administered to animals can prevent chemical carcinogenesis. Since in most of the experiments animals were administered retinoids after their exposure to the carcinogen, the prophylactic effect of the retinoids is believed to be in the post-initiation phase, i.e., during promotion of carcinogenesis. In addition, several epidemiological studies have shown an association of low dietary intake or serum levels of vitamin A with increased risk of cancer, notably lung cancer and other tumors of epithelial origin. Recent case reports have shown that isotretinoin can prevent the appearance of new basal cell carcinomas for four years in patients at high risk of developing new tumors.

Agricultural Library

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00104 CPSB

PERIOD COVERED

October 1, 1982 - September 30, 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

NHANES I Epidemiologic Follow-up Survey: Chemoprevention/Nutrition Aspects

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*

(Name, title, laboratory, and institute affiliation)

Gladys Block, Ph.D.

COOPERATING UNITS *(if any)*

National Center for Health Statistics, DRCCA

LAB/BRANCH

Biometrics and Operations Research Branch

SECTION

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
0.3	0.2	0.1

CHECK APPROPRIATE BOX(ES)

☐ (a) Human subjects ☐ (b) Human tissues ☒ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The purpose of the NHANES (National Health and Nutrition Examination Survey) Epidemiologic Follow-up Survey is to conduct a longitudinal study of 14,407 adults orginally surveyed in 1971-1975, to investigate subsequent health and mortality outcome. Respondents will be traced and re-examined. Information will also be obtained from hospital records, the National Death Index and death certificates. The NHANES Follow-up Survey is well under way in the field.

The purpose of this intramural project is to examine the relationship of chemopreventive and nutritional factors and cancer in the very large representative population which NHANES offers. It provides an opportunity to examine these factors and potentially confounding or modifying factors in a prospective fashion, and to examine the effectiveness or toxicity of some dietary agents which are currently of great interest for cancer prevention.

The relationship of baseline vitamin use, biochemical or nutritional measures and subsequent health status will be examined. In addition, descriptive data and trends in potential risk factors or protective factors over time will be examined.

The project will involve the recoding of certain baseline data, and the specification of an analysis plan to examine the relationships and trends described above. The National Center for Health Statistics will conduct preliminary analyses, and will participate with DRCCA in the development of more advanced analyses of these data.

ARCHIVE

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00105 BORB

PERIOD COVERED
October 1982 - September 1983

TITLE OF PROJECT (80 characters or less. Title must fit on one line between the borders.)
Research in Cancer Screening Methodology and Modeling

PRINCIPAL INVESTIGATOR (List other professional personnel on subsequent pages.)
(Name, title, laboratory, and institute affiliation)
Philip C. Prorok, Ph.D.

COOPERATING UNITS (if any)
Biometry Branch, DCCP

LAB/BRANCH
Biometrics and Operations Research Branch, DRCCA

SECTION
Screening Section

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
0.4	0.35	0.05

CHECK APPROPRIATE BOX(ES)
☐ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☐ (a2) Interviews

SUMMARY OF WORK (Use standard unreduced type. Do not exceed the space provided.)

The focus of this project is development and refinement of statistical procedures for the design and analysis of screening, detection, and related studies in cancer. Statistical problems under investigation include sample size determination, comparison of analysis methods, and development of monitoring techniques and stopping rules. Each of these problem areas is common to screening and prevention trials in which the Division participates, but the methods for screening studies must address the special lead time and length biases inherent in screening programs.

The research includes investigation of techniques to estimate and adjust for screening biases in the analysis of survival data, and the study of the relationship between long-term mortality and short-term outcome measures, such as stage shift. Probabilistic models of disease and screening are being developed to aid in the interpretation and evaluation of data from screening programs, and a breast cancer model relating doubling time to survival is under derivation in collaboration with the Biometry Branch, DCCP.

CORNELL UNIVERSITY

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00106 BORB

PERIOD COVERED

October 1982 - September 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Students Cancer Screening

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, title, laboratory, and institute affiliation)

Philip C. Prorok, Ph.D.

COOPERATING UNITS *(if any)*

LAB/BRANCH

Biometrics Operations Research Branch, DRCCA

SECTION

Screening Section

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
0.4	0.35	0.05

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☒ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Data from several cancer screening studies are being analyzed to gain a better understanding of the impact and consequences of such screening in various population settings. The results can be used by NCI in establishing cancer control policy. These databases also provide the opportunity for the testing and development of new techniques for data analysis. Results from the Health Insurance Plan of New York (HIP) breast cancer screening trial continue to indicate a long-term reduction in breast cancer mortality. In collaboration with the Field Studies and Statistics Program of the Division of Cancer Cause and Prevention (FSS), long-term case survival patterns and co-variables are being related to population mortality measures to determine when and in which subsets of cases the screening benefit occurred. Patterns of cause of death among breast cancer cases are being studied to distinguish between postponement of death and cure.

A group collaborating through the International Agency for Research on Cancer (IARC) is analyzing the cervical cancer screening programs in Scandinavia and Aberdeen, Scotland. The objective is to estimate false negative rates and natural history characteristics and relate these to the varying screening frequencies and delivery mechanisms in the participating countries. Two occupational high risk groups are under scrutiny. With FSS people, the bladder cancer screening program at the DuPont Company is being analyzed to relate disease characteristics and outcome to cytology and blood tests, smoking history and exposure to benzidine and β-naphthylamine. With FSS and the National Institute of Occupational Safety and Health (NIOSH), updated followup data are being collected in a study of sputum cytology screening for lung cancer among uranium miners. The relationships among cytology classification, radiation exposure, smoking history, lung cancer, and mortality data will be analyzed. Participation has begun in an International Union Against Cancer (UICC) screening evaluation project which will review screening data from worldwide sources and develop guidelines for UICC members.

Annex Stack

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00107 BORB

PERIOD COVERED

April 1983 - September 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Incidence of Basal Cell Skin Carcinoma in a High Risk Population

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, title, laboratory, and institute affiliation)

Anne Hartman, M.S. and Jancie Brown McPhillips

COOPERATING UNITS *(if any)*

Cancer Prevention Studies Branch, Prevention Program, DRCCA

LAB/BRANCH

Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
.6	0.5	0.1

CHECK APPROPRIATE BOX(ES)

☐ (a) Human subjects ☐ (b) Human tissues ☒ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

This study is developing estimates for the incidence of new basal cell skin carcinoma. The importance of this study is twofold: to obtain incidence for basal cell skin carcinoma in a high risk population already exhibiting previous basal cell carcinoma lesions; and to support the basal cell skin carcinoma prevention trial launched in collaboration with the Prevention Program. (The Prevention Program is embarking on a five-year randomized double-blind clinical trial designed to evaluate the effectiveness of low dosage levels of isotretinoin in reducing the incidence of basal cell skin carcinomas in a high risk population. [Z01 CN 00102 CPSB]). The estimated number of new cancer cases, excluding non-melanoma skin cancer and carcinomas in situ for 1983, is 855,000. The incidence of non-melonoma skin cancer is estimated to be approximately 400,000, of which approximately 80%, or roughly 320,000 would be basal cell carcinoma. Although basal cell carcinoma is rarely fatal, these numbers represent a big impact on the medical care system.

There is some evidence that patients with a previous history of basal cell skin carcinoma as well as the broader class of non-melanoma skin cancers are more likely, depending on the number of previous tumors, to develop subsequent skin cancers. However, the studies are limited in scope. This study will explore the previous lesions. This study will utilize one of the local military centers participating in the trial.

LIBRARY

DEPARTMENT OF HEALTH AND HUMAN SERVICES · PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00108 BORB

PERIOD COVERED

January 1983 - September 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Design of Pharmacokinetic Studies of Selenium

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*

(Name, title, laboratory, and institute affiliation)

Blossom Patterson, M.A.

COOPERATING UNITS *(If any)*

Cancer Prevention Studies Branch, DRCCA, Prevention Program

LAB/BRANCH

Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
0.30	0.25	0.05

CHECK APPROPRIATE BOX(ES)

☐ (a) Human subjects ☐ (b) Human tissues ☒ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Selenium is a possible cancer prevention agent, and is being considered for use in intervention trials. Two studies in collaboration with the Cancer Prevention Studies Branch, DRCCA Prevention Program, are planned to provide information on the bioavailability and pharmacokinetics of selenium in its prototype forms—sodium selenite (inorganic form) and selenomethionine (organic form). This information is unavailable for these agents in the dose currently considered optimal, and is necessary to the determination of time and manner of administration. The initial study will be the Selenium Pharmacokinetic Study. Parameters such as percent absorption, maximum concentration, time to maximum concentration, and half-life will be estimated for a single dose and compared in both fasting and nonfasting subjects. A second study, the Selenium Chronic Supplementation Study, will examine and compare the effects of multiple dosing on the absorption, distribution, and excretion of these two forms of selenium and a placebo. The Biometrics and Operations Research Branch, in cooperation with the Cancer Prevention Studies Branch, will function as a data collection center and has primary responsibility for the study design and analysis.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00109 BORB

PERIOD COVERED
January 1983 - September 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*
Development of Cancer Control Epidemiology and Tracking

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, Title, Laboratory, and Institute affiliation)
Douglas L. Weed, M.D., Ph.D., Senior Staff Fellow

COOPERATING UNITS *(If any)*

LAB/BRANCH
Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
.25	.20	.05

CHECK APPROPRIATE BOX(ES)

☐ (a) Human subjects ☐ (b) Human tissues ☒ (c) Neither
☐ (a1) Minors
☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The purpose of this effort is to focus on the analytic and design requisites of cancer control. As appropriate, the project will expand upon the current theoretical basis of epidemiology and test the resultant theories in ongoing studies. Epidemiology has focused upon two theoretical representations, cause and chance; yet cancer control goes beyond these. Also, although analytical techniques used in epidemiology have increased, the theoretical development of such techniques has been limited. In this regard, multiple cause-effect relationships have arisen from simple cause-effect relationships. Multiple causal factors can be controlled for in some analyses as confounders, but when control is not possible, these factors (called affect modifiers) are said to interact. Two current models of integration are the additive model and the multiplicative model; each has a corresponding effect measure, the rate difference (also called the attributable risk) and the rate ratio (also called the relative risk) respectively. One investigation currently underway models various interactive states, as they are reflected in the direction of trends in the difference measure and in the ratio measure across the interacting variable of interest. This is a trivial problem when the rates used to calculate the effect measures are constant across the interacting variable; it is non-trivial when these rates take on various functional forms appropriate to epidemiologic investigations, e.g., the Weibull curves of mortality by age.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00110 BORB

PERIOD COVERED
October 1, 1983 - September 30, 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*
Data Management and Design in Clinical Trials for Cancer Prevention and Control

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, title, laboratory, and institute affiliation)

Brenda K. Edwards, Ph.D. and Blossom Patterson, M.A.

COOPERATING UNITS *(If any)*
Prevention Program
Centers and Community Oncology Program
Cancer Control Science Program

LAB/BRANCH
Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.5	1.4	0.1

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☒ (c) Neither
☐ (a1) Minors
☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Large scale, long term controlled trials will be conducted by the Prevention and Cancer Control Science Programs during the next decade. Research in controlled trials methodology is being planned which will investigate three aspects of data management associated with these studies.

(1) Field test of micro-computer technology for data capture at local clinical sites using formated screen data entry via a keyboard or via handwriting. Systems will be evaluated in terms of equipment, development and maintenance costs, portability, ease of use by data managers and clinicians, and quality of data (including timeliness).

(2) Development of micro-processor software for onsite data editing and verification, and onsite assistance in conducting the trial according to protocol specifications, to improve data quality and protocol adherence.

(3) Utilization of technological developments in computer networking (machine to machine interface within a clinical center and across geographically diverse centers).

Research is also planned which addresses design and sample size estimation of prevention trials, e.g., controlled trials with chemoprevention agents or dietary interventions. Feasibility of such trials depends, in part, on the number of individuals required with respect to the number available, which is a function of the incidence of the targeted cancer in a given population. Since traditional designs for single cancer site mortality reduction range from 5,000 to 20,000 to more than 120,000 subjects, alternative designs are under exploration to enable conduct of these critically needed studies undertaken in a scientifically sound manner within feasible operational and fiscal constraints.

Such research has direct relevance to chemoprevention controlled trials, nutrition and cancer studies, the Clinical Community Oncology Program, cancer centers, occupational studies and Phase IV demonstration projects.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 CN 00111 BORB

PERIOD COVERED

January 1983 - September 1983

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Core Data and Dietary Methodology

PRINCIPAL INVESTIGATOR *(List other professional personnel on subsequent pages.)*
(Name, title, laboratory, and institute affiliation)

Gladys Block, Ph.D., Anne Hartman, M.S., William DeWys, M.D.

COOPERATING UNITS *(if any)*

LAB/BRANCH

Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION

National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.2	1	.2

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☒ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Two efforts are underway to enhance the comparability between trials conducted by the Division and ensure the collection of data on important variables in a standardized way. The first, a core questionnaire, is not intended to be exhaustive, but rather to provide a core which each investigation will expand upon. It includes demographic and tracking data, and exposure data including smoking, diet, occupation and psychosocial factors. The development of the areas of investigation and wording of specific questions made use of prior standardization projects and large national surveys. Thus, most questions included in the core data have been subjected to pretesting and will permit comparability of results with representative national data.

Second, a dietary assessment questionnaire is being developed for inclusion in the core data to be collected by DRCCA intervention trials, as well as in other diet investigations. The aim is to develop a questionnaire appropriate for large-scale administration and valid for individual, as opposed to group, dietary intake. The method involves a quantitative food frequence questionnaire, in which the list of foods is based on the 200,000 food items reported by the 20,000 individuals examined in NHANES II. The validity of the instrument will be examined in a separate validation study, and a biochemical validation is also planned. In addition, earlier work developed a list of indicator foods for vitamin A assessment, using a similar approach. Further work on this instrument will refine the list of foods and examine its validity and ability to classify individuals with respect to their vitamin A intake.

It is expected that the collection of a set of baseline data in an identical manner will improve the interpretation of results from different studies, facilitate the resolution of conflicting data, and thereby enhance the contribution of each study to knowledge about prevention strategies.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER: Z01 CN 00112 BORB

PERIOD COVERED
June 1983 - September 1983

TITLE OF PROJECT (80 characters or less. Title must fit on one line between the borders.)
Retrospective Dietary Assessment

PRINCIPAL INVESTIGATOR (List other professional personnel on subsequent pages.)
(Name, title, laboratory, and institute affiliation)
Gladys Block, Ph.D., Staff Fellow

COOPERATING UNITS (if any)

Gerontology Research Center, National Institutes of Aging

LAB/BRANCH
Biometrics and Operations Research Branch, DRCCA

SECTION

INSTITUTE AND LOCATION
National Cancer Institute, NIH, Bethesda, MD

TOTAL MANYEARS:	PROFESSIONAL:	OTHER:
1.10	1.0	0.10

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☒ (a2) Interviews

SUMMARY OF WORK (Use standard unreduced type. Do not exceed the space provided.)

This project, now in the design phase, will assess whether or not it is possible to gather accurate information about an individual's past dietary intake. An answer to this question will permit researchers to evaluate retrospective data on the association between diet and cancer, and to plan further studies on this question.

The study will make use of study subjects for whom dietary data was collected seven to fifteen years ago by means of seven-day diet records. These subjects will be interviewed, and their dietary intake during the past time period assessed by means of a food frequency questionnaire. Results will be evaluated with respect to the ability to classify individuals correctly, and the ability to determine the mean intake of groups.

In addition to improving the interpretation of observed diet-cancer associations, this technique, if validated, would permit the evaluation of an important potential confounder, past diet, in participants in chemoprevention trials.

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